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10/524,880

02/18/2005

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EXAMINER

ARCIERO, ADAM A

ART UNIT

PAPER NUMBER

1795

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/524,880 | Applicant(s) NISHIKAWA ET AL. | |
| | Examiner ADAM A. ARCIERO | Art Unit 1795 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on March 11, 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

FUEL CELL STACK

Examiner: Adam Arciero S.N. 10/524,880 Art Unit: 1795 August 10, 2009

DETAILED ACTION

1. The Applicant's amendment filed on March 11, 2009 was received. Claims 1-13 are currently pending. Claim 1 is amended. Claims 14-32 are canceled.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102/ 103

3. The claim rejections under 35 U.S.C. 102(b)/103(a) as being anticipated by, or in the alternative unpatentable over DAIDO et al. on claims 1-6, 8-9 and 12-13 are maintained.

As to Claims 1-2 and 12-13, DAIDO et al. discloses a non-aqueous secondary battery comprising an anode and cathode with their respective active materials. Said positive material is a lithium containing transition metal oxide and the negative material is a material capable of lithium doping/dedoping (pg. 1, [0002]). Said battery further comprises a non-aqueous electrolyte solution and a separator composed of a porous film made of a porous polymer, further including a network-like sheet (pg. 6, [0067]). Said separator swells in the electrolyte solution and retains said electrolyte (pg. 6, [0067]). DAIDO et al. discloses an example wherein said network-like sheet has a mean film thickness of 18 microns, a basis weight of 12 g/m², gas permeability of 0.04 seconds, a McMullin number of 9, wherein the product of said McMullin

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number and film thickness is 162 microns (pg. 9, Example 3). Said separator has a mean film thickness of 26 microns, a basis weight of 21.1 g/m² and a gas permeability of 22 seconds (pg. 10, Table 1). It is the position of the Examiner that the relationships (I and II) of claim 1 are inherently satisfied, given that the positive and negative electrode materials and specific separator of DAIDO et al. and the present application have the same materials, composition and properties. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. Inherency is not established by probabilities or possibilities. *In re Robertson*, 49 USPQ2d 1949 (1999). Applicant is advised to submit other information with respect to the DAIDO et al.'s non-aqueous battery, if it is shown to be patentably distinct from the instant invention.

Alternatively, it would have been obvious to one of ordinary skill in the art to adjust the amount of lithium utilized in the battery and the value for the overcharge-preventing function in order to provide a low-cost battery with appropriate safety characteristics during overcharge (pg. 1, [0001]).

As to Claims 3-6, DAIDO et al. discloses wherein the positive active material is LiNiO₂, LiMn₂O₄ or LiCoO₂ (pg. 4, [0062]).

As to Claims 8, DAIDO et al. discloses wherein said network-like sheet is a non-woven fabric (pg. 5, [0075]).

As to Claims 9, DAIDO et al. discloses wherein said non-woven fabric is composed of aromatic polyamides or polyesters (pg. 5, [0078]).

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4. The claim rejections under 35 U.S.C. 103(a) as being unpatentable over DAIDO et al. and NAKAMIZO et al. on claim 7 and DAIDO et al. and WATANABE et al. on claims 10-11 are maintained.

As to Claim 7, DAIDO et al. does not expressly disclose wherein the positive active material is composed of lithium manganate and lithium nickelate. However, NAKAMIZO et al. teaches a nonaqueous battery comprising a positive electrode material of LiCoO_2 , LiNiO_2 and/or LiMn_2O_4 (pg. 5, [0070]).

However, NAKAMIZO et al. is clearly teaching that a positive active material of LiNiO_2 combined with LiMn_2O_4 is considered functionally equivalent to the active material of LiCoO_2 , LiNiO_2 or LiMn_2O_4 of DAIDO et al. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to substitute the positive active material of LiNiO_2 combined with LiMn_2O_4 for the positive active material of DAIDO et al., because NAKAMIZO et al. teaches that they are recognized equivalents.

5. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over DAIDO et al. (US 2003/0003363 A1) as applied to claims 1-6, 8-9 and 12-13 above, and further in view of WATANABE et al. (US 6,083,644).

As to Claims 10-11, DAIDO et al. discloses a separator comprising a network-like support made of a non-woven fabric. DAIDO et al. does not expressly disclose the network like support as being a glass cloth.

However, WATANABE et al. teaches of a non-aqueous electrolyte secondary battery (Title) comprising a separator of a porous material which does not have electron conductivity

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having open pore and a durability against electrolytic solution and the active material. Said separator can be non-woven fabric, or a cloth comprising glass fibers (col. 13, lines 50-63).

Non-woven fabric separators and a glass fiber cloth separator are considered functionally equivalent separators for non-aqueous electrolyte batteries. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to substitute a glass cloth separator for the non-woven separator of DAIDO et al., because WATANABE et al. teaches that they are recognized equivalents.

Double Patenting

6. The nonstatutory obviousness-type double patenting rejections on claims 1-2, 8-9 and 12 as being unpatentable over DAIDO et al. ('352) are maintained.

Claims 1-2, 8-9 and 12-13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 8, and 10-12 of U.S. Patent No. 6,818,352 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of '352 patent anticipate the instant claims. See *In re Goodman*, 11 F.3d 1046, 29 USPQ 2d 2010 (Fed. Cir. 1993).

As to Claims 1-2 and 12-13, the overcharge-preventing function, total amount of lithium in the active material, weight of positive and negative active materials, etc. are all parameters that may be routinely manipulated.

Response to Arguments

7. Applicant's arguments filed on May 7, 2009 have been fully considered but they are not persuasive.

Applicant's principle arguments are:

a) Applicant argues that the ranges of $q_m + Q_n W_n$ are not the same between DAIDO et al. and the present application and that the battery of the present invention reciting relationship II (amended claim 1) differs from the battery of DAIDO et al. Furthermore, Table 4 of the present application shows the difference between the invention of DAIDO et al. and that of the present invention (Claim 1).

In response to Applicant's arguments, please consider the following comments:

a) DAIDO et al. teaches the same positive electrode material, negative electrode material and separator (pg. 10, Example 8) as that of the present application (pg. 12, [0174]-[0183] of the present application). Furthermore, DAIDO et al. discloses that the positive and negative electrode materials have the same compositions. It is the position of the Examiner that the relationships of claim 1 are inherently satisfied, given that the non-aqueous battery and specific separator of DAIDO et al. and the present application have the same materials and properties. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. Inherency is not established by probabilities or possibilities. *In re Robertson*, 49 USPQ2d 1949 (1999). Applicant is advised to submit other information with respect to the DAIDO et al.'s non-aqueous battery, if it is shown to be patentably distinct from the instant invention.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADAM A. ARCIERO whose telephone number is (571)270-5116. The examiner can normally be reached on Monday to Friday 8am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795